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A3. CONNECTIONS

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A3.1 General

When terminal equipment is connected to MTS or WATS it must comply with the FCC's Registration Program. If Grandfathered terminal equipment, test equipment or communications systems are connected, the Minimum Protection Criteria specified in this tariff must be met.

MTS and WATS are not represented as adapted for connection to other services or communications systems. They are designed, operated and maintained to provide satisfactory transmission only between a calling and a called station(s) equipped with suitable terminal equipment.

The Company is responsible for the quality of transmission from demarcation point to demarcation point. The Company is not responsible for the quality of transmission on the Customer's side of the demarcation points at a premises.

A3.2 Responsibilities of the Customer

When terminal equipment or a communications system is connected to MTS or WATS, the customer assumes responsibility for the connection as follows:

A3.2.1 Interference and Hazard

The operating characteristics of terminal equipment or communications systems connected to MTS or WATS must not interfere with, or impair, any of the services offered by this Company. In addition, they must not endanger the safety of Company employees or the public, damage or interfere with the proper functioning of Company equipment, or otherwise injure the public in its use of MTS or WATS.

The Company will take immediate action to protect its services or interests if this regulation is violated (see Cancellation of Service for Cause, Section A2.2.9).

A3.2.2 Changes to MTS or WATS

The Company is not obligated to alter or modify MTS or WATS because of additions or changes to terminal equipment or a communications system provided by the customer or others.

A3.2.3 Testing and Maintenance

If a trouble report occurs on an assembly, the customer must determine whether the fault is in 1) the connected terminal equipment or communications system, or 2) MTS or WATS. The Company will test and maintain only the services it provides.

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A3.2 Responsibilities of the Customer (Cont'd)

A3.2.3 Testing and Maintenance (Cont'd)

The testing of MTS or WATS will usually be made from a point-of-presence. A repair person will be dispatched to a customer's premises only when this Company deems it necessary to complete its tests, or when a specific request for a dispatch is received. When a repair person is dispatched, a Maintenance of Service Charge will apply if testing discloses that the MTS or WATS is functioning correctly (See Maintenance of Service Charge, Section A4.6).

A3.2.4 Information a Customer must Provide

Prior to reconnecting grandfathered equipment to MTS or WATS, the customer must provide the following information about the equipment to the Company:

Manufacturer's name, model number and type;

Ringer Equivalence Number and Type (if known);

Type of standard jack (if required);

Service to which equipment is being connected;

Notarized affidavit for premises wiring;

Description of interface;

Line or pin assignment for a multiline jack.

The customer must also notify the Company when the grandfathered equipment is permanently disconnected.

A3.3 Responsibilities of the Company

A3.3.1 General

In addition to furnishing and maintaining its service components for MTS and WATS, the Company will provide technical information pertaining to MTS and WATS interface parameters as an aid to the customer in selecting the appropriate interface.

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A3.3 Responsibilities of the Company (Cont'd)

A3.3.2 Changes in Minimum Protection Criteria, Operations, or Procedures

The Company is not responsible to any party if a change in its MTS or WATS components, Minimum Protection Criteria, operations, or procedures, which are consistent with the Registration Program, 1) affects any facilities, terminal equipment or communications systems provided by others in any way, or 2) requires their modification in order to be used with MTS or WATS. However, if such changes can be reasonably expected to materially affect the operating or transmission characteristics of the MTS or WATS or render any terminal equipment or communications system incompatible with MTS or WATS the Company will make a reasonable effort to notify the customer in writing of the proposed change. A reasonable interval will be allowed before the change is implemented to enable the customer to maintain compatibility of its terminal equipment or communications system with MTS or WATS.

A3.4 Connection to Service Provided by a Local Exchange Carrier

MTS or WATS may be connected to services provided by a local exchange carrier. The connections are subject to the regulations in this tariff and the appropriate tariff(s) of the local exchange carrier.

A3.5 Connection of a Communications System

When a communications system is connected to the Company's MTS or WATS, the customer must make all arrangements concerning the connected systems or service with its provider. The connection does not constitute a joint undertaking between this Company and the provider of the system or service. The system or service must be operated, and maintained so it will work satisfactorily with MTS or WATS. Connections to MTS or WATS will be made in accordance with the following:

A3.5.1 Answer Supervision

When MTS or WATS is connected to a communications system which is also connected to switching or terminal equipment, such equipment shall provide the necessary answer supervision so that chargeable time begins upon delivery of the MTS or WATS call to the equipment and ends upon termination of the call by the calling party.

A3.5.2 Minimum Protection Criteria

The connection at the MTS or WATS demarcation point must be made so that it continually complies with the specified Minimum Protection Criteria (see Minimum Protection Criteria, Section A3.6).

A3.5.3 Communications System Failures

When a communications system fails and the connection to MTS or WATS is not through switching equipment, the communications system must be arranged to promptly return the MTS or WATS to an idle (on-hook) state. In addition, the customer must promptly notify the Company when the communications system fails.

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A3.6 Minimum Protection Criteria

A3.6.1 General

Minimum Protection Criteria have been specified so that Company personnel, equipment, and services will be protected from the harmful effects of signal power overload, hazardous voltages and longitudinal imbalance. Minimum Protection Criteria applies to the direct electrical, acoustic, or inductive connections of terminal equipment and communications systems to MTS or WATS.

A3.6.2 All Connections

Terminal equipment and communications systems which are connected to MTS or WATS on a direct electrical basis or an acoustic or inductive basis, must comply with the following:

A. To protect other Company services, it is necessary that the signal which is applied at the demarcation point meets the following limits:

1. Metallic Voltage

a. 4 kHz to 270 kHz

Center Frequency (f) of 8 kHz Band	Max. Voltage in All 8 kHz Bands	Metallic Terminating Impedance
8 kHz to 12 kHz	- (6.4 + 12.6 log f) dBV*	300 ohms
12 kHz to 90 kHz	(23 - 40 log f) dBV	135 ohms
90 kHz to 266 kHz	- 55 dBV	135 ohms

*dBV = 20 $\log_{10}$ voltage in volts

b. The root-mean-square (RMS) value of the metallic voltage components in the frequency range of 270 kHz to 6 MHz shall, averaged over 2 microseconds, not exceed -15 dBV. This limitation applies with a metallic termination having an impedance of 135 ohms.

2. Longitudinal Voltage

a. 4 kHz to 270 kHz

Center Frequency (f) of 8 kHz Band	Max. Voltage in All 8 kHz Bands	Longitudinal Terminating Impedance
8 kHz to 12 kHz	- (18.4 + 20 log f) dBV*	500 ohms
12 kHz to 42 kHz	(3 - 40 log f) dBV	90 ohms
42 kHz to 266 kHz	- 62 dBV	0 ohms

*dBV = 20 $\log_{10}$ voltage in volts

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A3.6 Minimum Protection Criteria (Cont'd)

A3.6.2 All Connections (Cont'd)

A. To protect other Company services, it is necessary that the signal which is applied at the demarcation point meets the following limits:

2. Longitudinal Voltage (Cont'd)

b. The root-mean-square (RMS) value of the longitudinal voltage components in the frequency range of 270 kHz to 6 MHz shall, averaged over 2 microseconds, not exceed -30 dBV. This limitation applies with a longitudinal termination having an impedance of 90 ohms.

B. To prevent the interruption or disconnection of an MTS or WATS call, it is necessary that the signal applied at the demarcation point be limited. Specifically, the signal at the demarcation point shall at no time have energy concentrated solely in the 2450 to 2750 Hz band. If there is signal power at the demarcation point in the 2450 to 2750 Hz band, it must not exceed the power present at the same time in the 800 to 2450 Hz band.

A3.6.3 Direct Electrical Connections

In addition to the regulations in B. preceding, terminal equipment and communications systems which are connected to MTS or WATS on a direct electrical basis must comply with the following.

A. To prevent excessive noise and crosstalk, it is necessary that the power of the signal presented at the point-of-presence not exceed 12dB below one milliwatt when measured over any three second interval. To insure that this limit is not exceeded, the power of the signal which may be applied by the terminal equip ment or communications system to the demarcation point will be specified for each customer location. In no case shall the power exceed one milliwatt.

A3.6.4 Acoustic or Inductive Connections

In addition to the regulations in B. preceding, terminal equipment and communications systems which are connected to MTS or WATS on an acoustic or inductive basis must comply with the following.

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A3.6 Minimum Protection Criteria (Cont'd)

A3.6.4 Acoustic or Inductive Connections (Cont'd)

A. To prevent excessive noise and crosstalk, it is necessary that the power of the signal which is applied by the equipment to the demarcation point located on the customer's premises be limited so that the signal power does not exceed 9dB below one milliwatt when averaged over any three second interval. However, to permit each customer, independent of distance from the point-of-presence, to supply signal power which at the point-of-presence approximates 12dB below one milliwatt when averaged over any three second interval, the Company, at the customer's request, will specify, for each customer location, the signal power at the demarcation point, which shall in no case exceed one milliwatt.

A3.7 Recording of Two-Way Telephone Conversations

The FCC has adopted regulations which apply to the recording of two-way telephone conversations on MTS or WATS. These services are not represented as adapted to the recording of such conversations. However, customer-provided voice recording equipment may be connected to MTS or WATS. Its connection is subject to the Registration Program and to the following:

A3.7.1 Direct Electrical Connection

Voice recording equipment may be used to record two-way telephone conversations if a distinctive recorder tone is repeated at intervals of approximately fifteen seconds. This distinctive recorder tone is required when recording equipment is in use and is electrically connected with services of the Company. The distinctive recorder tone can be provided as part of: 1) the recording equipment, 2) the registered or grandfathered protective circuitry, or 3) a grandfathered connecting arrangement.

The voice recording equipment must be arranged so that it can be connected or disconnected (or switched on or off) at the will of the customer.

A3.7.2 Exceptions to the Requirement for the Recorder Tone

The distinctive recorder tone is not required:

A. When used by an FCC licensed broadcast station customer for the recording of two-way telephone conversations solely for broadcast over the air.

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A3.7 Recording of Two-Way Telephone Conversations (Cont'd)

A3.7.2 Exceptions to the Requirement for the Recorder Tone (Cont'd)

B. When used by the United States Secret Service of the Department of Treasury for recording two-way telephone conversations which concern the safety and security of the person of the President of the United States, members of his immediate family, or the White House and its grounds.

C. When used by a broadcast network or by a cooperative programming effort, composed exclusively of FCC broadcast licensees, to record two-way telephone conversations solely for broadcast over the air by a licensed broadcast station.

D. When used for recording at United States Department of Defense Command Centers of emergency communications transmitted over the Department of Defense's channel system when connected to MTS or WATS.

E. When used by the United States Nuclear Regulatory Commission of the Department of Energy with respect to the telephone systems located at its Operations Center for the recording of two-way telephone conversations.

A3.7.3 Acoustic or Inductive Connections

Voice recording equipment may not be connected to MTS or WATS for the recording of two-way telephone conversations by means of an acoustic or inductive connection, unless its use qualifies under the regulations, "Exceptions to the Requirement for the Recorder Tone."